REJECTIONS

Rejections under 35 U.S. C. §112, second paragraph

Claims 2, 3 and 5 were rejected under 35 U.S. C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, claims 2, 3 and 5 were rejected as being in improper Markush format.

As noted, claims 2, 3 and 5 have been amended to correct the typographical error that render these claims in improper Markush format. Accordingly, Applicant respectfully requests withdrawal of the rejection because claims 2, 3 and 5 are now in proper format.

Rejections under 35 U.S.C. §102(b)

Claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,382,367 (Zinkan) and U.S. Patent No. 5,800,732 (Coughlin).

Claim 1 is distinguishable over the teachings of Zinkan and Coughlin because neither reference teaches or suggests corrosion inhibition by inducing passivation. Zinkan explains that the prevention of corrosion and buildup of scale generally found in cooling water systems can be controlled by adding effective amounts of hydrogen peroxide to the cooling water to control bacteria and that the addition of the peroxide, in combination with triazoles and anionic polymers, to cooling water kills bacteria and prevents the buildup of scale and corrosion. Notably, Zinkan explains that the combination of hydrogen peroxide with polymeric dispersants and a triazole decreases the rate of corrosion, whereas the use of hydrogen peroxide alone results in a high rate of corrosion. (Zinkan at column 3, line 20 - column 4, line 66.) Thus, Zinkan not only teaches against the use of hydrogen peroxide but also fails to teach or suggest inhibiting corrosion by passivation.

Coughlin teaches an all-in-one treatment composition to prevent sludge, scale, microorganism growth and corrosion in open water systems. Coughlin's composition includes a peroxide, stabilizers including at least one phosphonate, a triazole and optionally a polymeric dispersant and a ferrous metal corrosion inhibitor. Coughlin notes that Zinkan teaches that hydrogen peroxide is separately added from the corrosion inhibitors and dispersant and explains that the all-in-one water treatment system advances the art by introducing a stabilizing agent to

maintain peroxide activity. (Coughlin at column 1, line 14 - column 2, line 17.) Thus, Coughlin similarly fails to teach or suggest inhibiting corrosion by passivation.

Dependent claims 2 and 3 depend directly on claim 1 and are distinguishable over the cited references for at least the same reasons.

Claims 1 and 2 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,736,097 (Ono).

Claim 1 is distinguishable over the teachings of Ono because Ono fails to teach or suggest corrosion inhibition by inducing passivation. Ono teaches a method of preventing pitting corrosion in a copper or copper alloy tube due to microbial contamination or fouling in a water system by adding hydrogen peroxide or a hydrogen peroxide producing agent so that "the oxidizing action of the hydrogen peroxide works for removing microbes and for disinfection of oxidation of protein, whereby the rest potential of copper or its alloy is kept low and pitting corrosion thereof is prevented." (Ono at column 2, lines 31-57.) Thus, Ono also fails to disclose a method comprising incorporating a hydrogen peroxide donor to inhibit corrosion by inducing passivation.

Claim 2 depends on claim 1 and is distinguishable from the cited reference for at least the same reasons.

Claims 4-6 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,658,467 (LaZonby).

Claim 4 is also distinguishable from LaZonby because LaZonby fails to teach or suggest a method that inhibits corrosion by inducing passivation. LaZonby teaches a method and composition for inhibiting growth of microorganisms using peracetic acid and a non-oxidizing biocide. (LaZonby at column 2, lines 33 – 44). In particular, in Example 7, LaZonby explains that adding peracetic acid with an isothiazolin blend inhibits microorganism growth. Thus, LaZonby fails to teach or suggest inhibiting corrosion by inducing passivation.

Claims 5 and 6 are dependent claims that depend directly on claim 4 and are patentable for at least the same reasons.

In view of the foregoing, the rejection under 35 U.S.C. §102(b) has been overcome. Accordingly, Applicant respectfully requests withdrawal of the rejection.

Rejections under 35 U.S.C. §103(a)

Claims 4-6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Coughlin and Ono.

Claim 4 is patentable over the teachings of Coughlin and Ono, alone or in combination, because the proposed combination would fail to teach a method for inhibiting corrosion by inducing passivation. As mentioned above, Coughlin fails to disclose inhibiting corrosion by passivation and Ono neither teaches or suggests as much. Thus, even if Coughlin and Ono were to be combined, such a combination would fail to disclose the invention as recited in claim 4.

Claims 5 and 6 are dependent claims that depend directly on claim 4 and are patentable for at least the same reasons.

Claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,000,866 (Woyciesjes), and U.S. Patent No. 4,234,440 (Hirozawa).

Claim 1 is patentable from the teachings of Woyciesjes and Hirozawa because neither reference teaches or suggests such a combination and because, even if they were to be combined, such a proposed combination would not teach or suggest inhibiting corrosion by inducing passivation. Woyciesjes fails to teach or suggest using the teachings of Hirozawa so as to arrive at the invention as recited in claim 1. Conversely, Hirozawa fails to teach or suggest using the teachings of Woyciesjes so as to arrive at the invention as recited in claim 1. Further, Woyciesjes and Hirozawa are each directed to a composition that can be used as corrosion inhibitors for anti-freeze solutions, specifically, alcohol-based anti-freeze solutions. Notably, as Hirozawa teaches, corrosion inhibitors in anti-freeze solutions prevent the decomposition of the alcohol to acidic products. (Column 1, lines 16-25). Thus, even if the references were to be combined, the proposed combination would teach a method that prevents alcohol decomposition and would fail to recite a method that inhibits corrosion by inducing passivation. Therefore, claim 1 is patentable over Woyciesjes and Hirozawa because neither teaches or suggests combining the teachings of each other and because such a proposed combination would not result in the invention as claimed.

Claims 2 and 3 are dependent claims that depend directly on claim 1 and are patentable for at least the same reasons.

In light of the foregoing, the rejection under 35 U.S.C. §103(a) has been overcome. Accordingly, Applicant respectfully requests withdrawal of the rejection.

Information Disclosure Statement

Applicant respectfully requests reconsideration of the information referred to in the Information Disclosure Statement filed on November 26, 2001. Applicant resubmits herewith copies of the references submitted therein.

Additional Claims

As noted, claims 10-15 have been added. These claims recite other aspects and features of the invention and are allowable for at least the same reasons discussed above.

CONCLUSION

In view of the foregoing amendments and remarks, this application is now in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 500214.

Respectfully submitted,

Roy Martin, Applicant

By: _____

Peter C. Lando, Reg. No. 34,654
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2211
Tel. No.: (617) 720-3500
Attorney for Applicant

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MARKED-UP CLAIMS

[Claim]1. (Amended) A method for inhibition of corrosion of a metal which experiences active-passive transition in contact with an electrolyte comprising:

incorporating one or more hydrogen peroxide donors with said electrolyte at a concentration effective to inhibit corrosion by inducing passivation of a surface of the metal.

[Claim]2. (Amended) The method in accordance with claim 1 wherein said hydrogen peroxide donors are selected from the group consisting of hydrogen peroxide, sodium peroxide, potassium peroxide, calcium dioxide, sodium percarbonate, potassium percarbonate, sodium perborate, potassium perborate [or]and mixtures thereof.

[Claim]3. (Amended) The method in accordance with claim 1 wherein said metal is selected from the group consisting of steel(s), aluminum, titanium [or]and mixtures thereof.

[Claim]4. (Amended) A method for inhibition of corrosion of a metal which experiences active-passive transition in contact with an electrolyte comprising:

incorporating one or more peroxycarboxylic acid or constituents thereof with said electrolyte at a concentration effective to inhibit corrosion by inducing passivation of a surface of the metal.

[Claim]5. (Amended) The method in accordance with claim 4 wherein said metal is selected from the group consisting of steel(s), aluminum, titanium [or]and mixtures thereof.

[Claim]6. (Amended) The method in accordance with claim 4 wherein said peroxycarboxylic acids are formed from acids selected from the group consisting of formic acid, acetic acid, citric acid, oxalic acid, gluconic acid, gluctoheptonic acid, succinic acid, acrylic acid, polyacrylic acid, maleic acid, polymaleic acid, polyepoxysuccinic acid, ethylene-diamine-tetraacetic acid, malonic acid, adipic acid, phosphonobutanepolycarboxylic acid and mixtures thereof.